



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Douglas U. Mennje et al.)
Serial No.: 09/684103) Group Art Unit: 3653
Filed: October 5th, 2000) Examiner: Jeffrey A. Shapiro
For: Method and Apparatus for) Attorney Docket No.: 47171-00271USP1
Document Identification)
and Authentication)

DECLARATION OF DR. FRED JEFFERS UNDER 37 C.F.R. § 1.132

Assistant Commissioner
For Patents
Washington, DC 20231

CERTIFICATE OF MAILING
37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below:

Dear Sir:

Feb. 7, 2007
Date

Michael Steele
Michael Steele

I, Dr. Fred Jeffers, declare that:

1. I am a Research Associate of Cummins-Allison Corporation (hereinafter "Cummins"). I have held this position since January 5, 2004, and have been employed by Cummins since that date.
2. Since 2004 I have also worked for Mednovus, Inc. on ferromagnetic detection products.
3. From January 2004 to June 2004, I was a consultant to Iomega Corp. In this position, I worked with high density floppy disk recording. From 1998 to 2003, I was a Senior Technologist with Iomega Corp., and worked on developing a new floppy disk drive. From 1974

to 1998, I was a Senior Research Associate with Spin Physics/Eastman Kodak, working on numerous projects involving magneto graphics, magnetics and magnetic recording. A project of note was the design and fabrication of a very effective counterfeit currency detector which is believed to be still in use in all US Federal Reserve Banks. From 1968 to 1974, I was a Senior Scientist with Bell and Howell Research Lab, working on magneto graphics, II-VI semiconductors, and magnetic recording physics.

4. I have published nearly four dozen papers on magnetics. A forthcoming book I authored on magnetics will be published by the Chicago Review Press in March of 2007.

5. I have 60 issued U.S. patents in several fields, including magnetic recording heads, magneto resistive magnetometers, and other magnetic devices and processes, magneto graphics, II-VI semiconductor strain sensors, and X-Ray imaging. Several more patent applications concerned with MRI safety and currency security systems are pending.

6. I graduated from Michigan State University with a bachelor's degree in Physics. I also hold a master's degree in Physics from New Mexico State University, and a doctorate in Theoretical Physics from New Mexico State University.

7. I have been elected Fellow of the Institute of Electrical and Electronic Engineers.

8. I have read and understand the above identified application including the claims, as well as the cited references, U.S. Pat. No. 5,255,129 ("Jones"), U.S. Pat. No. 5,151,607 ("Crane"), and U.S. Pat. No. 5,761,089 ("McInemy").

9. Jones does not teach or suggest non-inductive magnetic sensors. Jones explicitly discloses an inductive scanhead as element 40 within FIG. 5.

10. Furthermore, Jones does not teach or suggest closely spaced magnetic sensors. As the Jones patent describes FIG. 3 as a schematic representation, one skilled in the art would not recognize FIG. 3 of Jones as teaching, or suggesting the use of closely spaced magnetic sensors or closely spaced non-inductive sensors. Furthermore, the sensors used in Jones are inductive sensors, wherein the sensitivity of the sensor is proportional to the number of wire turns around the core of the sensor. Because the magnetic field generated by a scanned security thread is small, it would require a significant number of turns in order to generate a sufficient signal for evaluation. The high number of turns would occupy significant physical space, such that one skilled in the art would not understand Jones to teach or suggest closely spaced magnetic sensors.

11. Crane does not teach or suggest non-inductive magnetic sensors. Crane explicitly discloses inductive sensors when describing its metal detecting circuit 11. As described in Crane, “[a]s a metal is brought in proximity to the metal detecting circuit 11, the inductor L, *causes eddy currents to be induced in the metal, thereby changing the reactance of inductor L*, and causing the metal detector circuit 11 to change its resistance as reflected on pins 2 and 3 causing the oscillator 44 to change frequency.” See Crane at Col. 3, lls. 2-8 (emphasis added).

12. Furthermore, Crane does not teach or suggest closely spaced magnetic sensors. Likewise, Crane does not teach or suggest closely spaced non-inductive magnetic sensors. One skilled in the art would not recognize Crane as teaching or suggesting the use of closely spaced magnetic sensors or closely spaced non-inductive magnetic sensors.

13. McInerny does not teach or suggest non-inductive magnetic sensors. McInerny explicitly discloses inductive sensors when describing a magnetic read head's functionality.

McInerny expressly teaches that "as the dollar bill passes over the read head, the *induced electrical signal produced by the read head* will be characterized by two periods of irregular activity indicative of the passage of the leading and trailing peripheral areas of the magnetic ink bearing portion of the dollar bill." See McInerny at Col. 9, IIs. 35-40 (emphasis added).

Therefore it is clear that McInerny teaches only inductive sensors.

14. Furthermore, McInerny does not teach or suggest closely spaced magnetic sensors. Likewise, McInerny does not teach or suggest closely spaced non-inductive magnetic sensors. One skilled in the art would not recognize McInerny as teaching or suggesting the use of closely spaced magnetic sensors or closely spaced non-inductive magnetic sensors.

15. In my opinion, it would not be obvious to one of ordinary skill in the art to separate the inductive magnetic sensors in Jones, Crane, or McInerny by a center to center distance of about five millimeters or less or such that adjacent sensors have a gap distance of about one millimeter or less, based on Jones, Crane, McInerny, or any combination thereof.

16. In conclusion, there is nothing in Jones, Crane, McInerny, or any combination thereof which teaches or suggests arranging the inductive magnetic sensors described therein such that adjacent magnetic sensors have either (a) a center to center distance of about five millimeters or less or (b) a gap distance of about one millimeter or less. None of these references teach or suggest how such a close spacing could be achieved using the inductive sensors described therein.

I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States

Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date:

2-6-07

Fred Jeffers
Dr. Fred Jeffers